

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/014860

International filing date (day/month/year)
30.12.2004

Priority date (day/month/year)
30.12.2003

International Patent Classification (IPC) or both national classification and IPC
F28D15/02, B64D13/08, B64D11/04

Applicant
AIRBUS DEUTSCHLAND GMBH

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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10/581328

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/014860

AP20 Rec'd PCT/PTO 01 JUN 2006

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/014860

**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or
Industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	8,9,11,12,16
	No: Claims	1-7,10,13-15,17,18
Inventive step (IS)	Yes: Claims	16
	No: Claims	8,9,11,12
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2004/014860

Re Item V**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

D1: US-A-2,499,736 (N.E.Af Kleen, 7 March 1950)

D2: US-A-5,966,951 (Ingemar Hallin et al., 19 October 1999)

1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent product claim 1 and independent method claim 18 is not new in the sense of Article 33(2) PCT.

The document D1 discloses (the references in parentheses applying to this document):

- a cooling device for expelling heat from a heat source located in the interior of an aircraft to a heat sink (column 5, line 68 - column 6, line 7)
- with a piping system sealed against the surrounding atmosphere (column 1, line 45-50) which is thermally coupled to a heat intake section with the heat source (column 1, line 52-53) and to a heat output section with the heat sink (column 1, line 50-51)
- the piping system is filled with a heat conveyance medium which, when it takes in heat from the heat source in the heat intake section undergoes a transition from the liquid phase to the gaseous phase, then flows into the heat output section and here, when discharging heat to the heat sink, condenses once again and flows back into the heat intake section (column 1, line 49; column 3, line 10-20)

Claim 18 also fails in meeting the novelty requirements of Article 33(2) PCT as it repeats the features of claim 1, worded in terms of the corresponding method steps.

2. The following dependent claims do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty.
- claim 2 (see figure 1 of D1)

- claims 3,4,5 (see figure 4 of D1)
- claim 6 (figure 6 of D1, item 32,33)
- claim 7 (D1, column 7, line 38-43)
- claim 10 (D1, figure 6, item 35,38,41)
- claims 13,14 (D1, column 5, line 73 - column 6, line 3)
- claim 15 (D1, figure 3)
- claim 17 (D1, figures)

3. The following dependent claims do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

Heat transfer regulation by means of the control of the heat conveyance flow as lined out in claims 8, 9, 11 and 12 is well known in the field of heat pipes (D2, column 6, line 35-62). The skilled person, looking for a possibility to provide a temperature control will take this solution into account without having to exercise any inventive skills.

Re Item VIII

The application does not meet the requirements of Article 6 PCT, because claim 11 is not clear. The stated dependency is unclear with respect to the introduction of the ventilator (claim 6) and the regulator valve (claim 9).